

LARVAE OF NEOTROPICAL COLEOPTERA XXII. DESCRIPTION OF
ADULTS AND IMMATURES OF *LAGRIOIDA NORTONI* SP. N., AND
BIONOMICS (COLEOPTERA, TENEBRIONOIDEA, ANTHICIDAE)

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ABSTRACT

Immatures and adults of *Lagrioida nortoni* sp. n., are described from sand dunes at Praia do Cassino, Rio Grande, Rio Grande do Sul, Brazil. Adults were collected on leaves of *Panicum racemosum* Spr. and *Spartina ciliata* Kunth (Gramineae) and the immatures were taken in the roots and stems of the same plants. The life-cycle was completed from adults maintained and reared in the laboratory.

KEYWORDS. Anthicidae, Coleoptera larva, *Lagrioida*, *Panicum*, *Spartina*.

INTRODUCTION

The genus *Lagrioida* Fairmaire & Germain, 1860 was proposed for two new Chilean species: *Lagrioida obscurella* and *L. rufula*. PASCOE (1876) described *L. brouni* from New Zealand and CHAMPION (1895), *L. australis* from Tasmania. BLAIR (1928: 29) and BLACKWELDER (1945: 493) included the genus *Lagrioida* under Pythidae, Lacconotinae, Batodiini, Batodiina. CROWSON (1967) pointed out the difficulties in stablishing the systematic position of *Lagrioida* in the Heteromera and placed it in his new family Cononotidae along with *Cononotus* LeConte, 1851 and *Agnathus* Germar, 1825. ABDULLAH & ABDULLAH (1968) included *Lagrioida* in the Anthicidae, Eurygeniinae, Lagrioidini. ABDULLAH (1974) removed *Lagrioida* from Eurygeniinae and placed it in Lagrioidinae, Lagrioidini along with Cononotini (genera *Cononotus* and *Agnathus*) in the Anthicidae. MAMAEV (1976) described the larva of *Agnathus decoratus* (Germar, 1818) and removed the genus from Lagrioidinae (Anthicidae) to Pedilidae. DOYEN (1979) described the larva of *Cononotus bryanti* Van Dyke, 1939 and transferred the genus from Lagrioidinae (Anthicidae) to Pedilidae. The Lagrioidini *sensu* ABDULLAH (1974) remains in the Anthicidae with only the genus *Lagrioida*.

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Immatures of the genus *Lagrioida* were undescribed up to date. The distribution of this genus in South America is now expanded with the record of a new species, *Lagrioida nortoni*, from Rio Grande do Sul, Brazil.

The material examined (9 eggs, 54 young larvae, 11 mature larvae, 3 pupae, 86 ♂, 69 ♀) is deposited in the following collections: Australian National Insect Collection, Commonwealth Scientific and Industrial Research Organization, Canberra (ANIC); Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre (MCNZ); Museu de Zoologia, Universidade de São Paulo, São Paulo (MZSP).

Lagrioida nortoni sp. n.

(Figs. 1-43)

Type material. Holotype ♂ (adult). "BRASIL, Rio Grande do Sul: Rio Grande, Praia do Cassino, dunas, sobre *Panicum racemosum*, 16.IV.1993, Exp. MZSP col." (MZSP). Paratypes: same data as holotype, "28 km Sul, dunas primárias, associados às folhas e espiguihas de *Panicum racemosum*", 07.XI.1990, N. M. Gianuca col., 6 ♂, (MZSP); "associados às espiguihas de *Panicum racemosum*", 14.XI.1990, N. M. Gianuca col., 14 ♂, 4 ♀ (MZSP); "associados às espiguihas de *Spartina ciliata*", 30.XI.1992, N. M. Gianuca col., 1 ♂, 1 ♀ (MCNZ), 28 ♂, 29 ♀ (MZSP); "dunas, sobre *Panicum racemosum*", 13.IV.1993, Exp. MZSP col., 2 mature larvae, 1 pupa, 1 ♀ (MZSP); 16.IV.1993, Exp. MZUSP col., 2 ♂, 2 ♀ (ANIC), 3 mature larvae, 2 pupae, 28 ♂, 18 ♀ (MZSP); "dunas primárias, em folhas de *Panicum racemosum*", 28.IV.1993, N. M. Gianuca col., 4 mature larvae (MZSP); "15 km Sul, dunas primárias, associados às espiguihas de *Panicum racemosum*", 22.V.1993, N. M. Gianuca col., 2 mature larvae (MZSP).

Other examined material (not paratypes, some specimens dismembered in ethanol and/or slide mounted). Same data as holotype, "28 km Sul, dunas primárias, associados às folhas e espiguihas de *Panicum racemosum*", 07.XI.1990, N. M. Gianuca col., 3 ♀ (MZSP); "associados às espiguihas de *Panicum racemosum*", N. M. Gianuca col., 3 ♀ (MZSP); "associados às folhas e espiguihas de *Spartina ciliata*, 30.XI.1992, N. M. Gianuca col., 6 ♀ (MZSP); "dunas, sobre *Panicum racemosum*", 13.IV.1993, Exp. MZUSP col., 1 ♀ (MZSP); 16.IV.1993, Exp. MZUSP col., 9 eggs, 13 young larvae, 7 ♂, 1 ♀ (MZSP); "dunas primárias, em folhas de *Panicum racemosum*", 2 young larvae (ANIC), 22 young larvae (MZSP); "15 km Sul, dunas primárias, associados às folhas de *Panicum racemosum*", 22.V.1993, N. M. Gianuca col., 17 young larvae, (MZSP).

Type locality. BRAZIL. Rio Grande do Sul: Rio Grande, Praia do Cassino.

Etymology. We take the pleasure to name this species after our colleague, Dr. Norton M. Gianuca (Departamento de Oceanografia, Fundação Universidade do Rio Grande, FURG), who discovered and collected the first specimens, and in recognition of his contributions to the better knowledge of the ecology of Rio Grande sand beaches.

Male (figs. 1-13, 19, 20). Length: 2.5-3.3 mm; width: 0.8-1.0 mm. Head, pronotum and basal 1/3 of elytra yellowish to testaceous; distal 2/3 of elytra grayish; legs and underside yellowish to testaceous, except ventrites, darkened; tegument coarsely punctuated, with a cinereous decumbent pubescence; some specimens show the elytra completely darkened, grayish from bases to apices.

Head. Slightly constricted behind eyes, forming wide neck. Eyes prominent; coarsely faceted; asetose. Antenna (fig. 6): antennal insertion not visible from above, placed between eyes and base of mandibles; 1.7 times as long as pronotum length; 11-segmented; articles 1-8 filiform; 9-11 wider than those preceding, forming a weakly defined club. Frontoclypeal suture indistinct. Labrum (fig. 8) transverse, about 1.8 times as long as wide; anterior margin rounded; distal half bearing elongate, stiff setae. Epipharynx (fig. 9) bearing 12 short setae on each anterior side, inwardly curved. Mandibles (figs. 12, 13) symmetrical, broad, slightly longer than wide, apically bidentate;

scissorial area minutely denticulate; mesally with a large, lobe-like prosthema; basally bearing a molar surface; outer margin forming a flap-like expansion, dorsally (fig. 12) bearing an irregular row of elongate and curved setae. Maxilla (fig. 10) with galea divided into a small and triangular basigalea, and a transverse and bulbous distigalea; lacinia elongate, rounded at apex; apex of distigalea and adoral surface of lacinia densely tufted with curved, coarse setae; palpus very setose, segment 4 securiform and about as long as the length of segments 2 and 3 combined. Labium (fig. 11): ligula subtrapezoidal, widened toward apex, anterior margin straight, with a dense fringe of slender setae; palp 3-segmented, article 1 smaller, segment 2 broader and widened near apex, segment 3 fusiform and 1.2 times longer than segment 2. Hypopharynx (fig. 5) densely covered with short, slender setae.

Thorax. Prothorax slightly longer than wide (1.1 times), slightly narrower than head. Pronotum convex; lateral sides rounded; wider near apex; gradually converging behind; anterior region rounded; prosternal process very narrow; coxal cavities (fig. 2) widely open behind, internally closed. Mesothorax: scutellum transverse, posterior margin rounded; episterna almost meeting at the middle in front of sternum; coxal cavities narrowly separated (fig. 4), outwardly open and reached by mesepimera. Metathorax: metasternum (fig. 4) slightly wider than long, longitudinal suture short and extending about $2/5$ of its length; coxal cavities widely separated by the broad process of ventrite 1; endosternite: furca with stalk longer than wide and broadening outwards into a well differentiated lamina, anterior tendons placed on the arms and widely separated. Elytra 2.1 times as long as wide; 3 times the length of pronotum; closely punctured but not striate. Membranous wing (fig. 7) with wedge cell closed; 4 anal veins present; subcubital fleck distinct; cubital vein with a short but conspicuous seta. Legs: protrochantin concealed, procoxa conical and projecting; mesotrochantin exposed, mesotarsomere 1 about as long as the length of tarsomeres 2 and 3 combined; metatrochantin concealed, internal keel of metacoxa with a narrow-based apophysis; all tibiae bearing 2 subequal, apical spurs; all penultimate tarsomeres profoundly bilobate.

Abdomen: First 2 visible ventrites connate. Genitalia (figs. 19, 20): aedeagus of inverted heteromeran type, cap-piece ventral; parameres fused throughout, acuminate at apex, with a group of 4-6 stout setae in the lateral margins; basal piece 0.6 times as long as parameres; median lobe tapering forwards, margins slightly constricted near apex; median struts short, about 1.2 times the basal piece length.

Female. Length: 2.8-5.0 mm; width: 1.2-1.6 mm. Larger than male; testaceous or yellowish throughout, slightly darkened along elytral suture.

Terminalia (figs. 16): ovipositor elongate, with 2 long baculi; coxites setose; proctiger also bearing 2 long baculi in the lateral side; ventrite 8 (fig. 17); abdominal tergite 8 (fig. 18). Reproductive system (fig. 14): spermathecal accessory gland elongate emptying into the anterior end of the bursa; spermatheca (fig. 15) hyaline, trilobate, opening near the end of bursa; bursa copulatrix bearing rows of spicules.

Remarks. Along with the 2 Chilean species, *Lagrioida rufula* and *L. obscurella*, *L. nortoni* sp. n. is the third known member of *Lagrioida* to be found in South America, representing the first occurrence of the genus in Brazil, and extending its geographical distribution considerably northwards. Two other species of *Lagrioida* are known from the Australian Region, *L. browni* from New Zealand and *L. australis* from Australia and Tasmania. Unfortunately, none of the 4 formerly known species were adequately

described. We only examined 2 adult specimens of *L. australis*, through the kindness of Dr. J. F. Lawrence (ANIC), thus our comparisons are based chiefly in the original descriptions, very unsatisfactory and meager in diagnostic characters.

The 2 Chilean species were described from a series of specimens collected together, in the same place. It is possible that they represent the different sexes of the same species, the darker and smaller specimens being the males (*L. obscurella*) and the larger and reddish specimens the females (*L. rufula*). PASCOE (1876) already guessed the possibility of *L. obscurella* being only a "variety" of *L. rufula*. Only the examination of the types can elucidate that problem.

Lagrioida nortoni sp. n. differs from the Chilean species mainly by coloration (*L. rufula* has reddish integument, *L. obscurella* is brownish with antennae and legs reddish); furthermore, *L. nortoni* does not attain the size reached by *L. rufula* (7 mm). *L. nortoni* is distinguished from the Australian species as follow: *L. australis* has the pronotum sides more rounded before the middle, while in *L. nortoni* the margins are more gradually converging behind; moreover, the elytra of *L. australis* are more broadly oval. *L. brouni* seems to have the punctuation much coarser and not so close.

Larva (figs. 21-40). Length: 6.1 mm; width: 0.9 mm at abdominal segment 4. White-cream; orthosomatic; subcylindrical; subparallel; lightly sclerotized except for urogomphi; integument smooth on dorsal side, ventral side densely covered by micro rounded protuberances; fine setae mainly on ventral side.

Head. Prognathous; base slightly inserted in prothorax at lateral regions. Dorsal side (fig. 36) with some long and short setae. Ventral side (fig. 37) with short hypostomal rods. Frontal suture U-shaped (fig. 36). Coronal suture absent. Endocarina absent. Five pairs of stemmata (fig. 38): 3 dorsal, 2 ventral. Antenna (fig. 39) 3-segmented; inserted on well developed antennifer; segment 1 as long as segment 2, with 3 setae; segment 2 with 7-9 setae on anterior region; sensorial appendix conical, almost as long as segment 3; segment 3 with some subapical setae, a long setae on apex. Clypeus (fig. 36) with anteclypeus and postclypeus; anteclypeus (fig. 36) transverse, with 2 pairs of setae; postclypeus (fig. 29) trapezoidal, with 2 long and 1 very short pairs of setae. Ventral mouthparts retracted. Labrum (fig. 29) symmetrical; transverse; anterior margin rounded; with 4 pairs of setae. Epipharynx (fig. 30): anterior margin with 4 pairs of stout setae; with 2 anteromarginal asperate areas; anterior region with many short spines and 10 sensorial pits; posterior region with 2 stout setae on central area, lateral areas with groups of thick setae and thin scales, basal area with a group of sensorial pits. Mandibles (figs. 32, 33) slightly asymmetrical; sclerotized; with a pair of laterodorsal setae; apex bidentate; scissorial area tridentate; mola tuberculate, with some hyaline basal processes; mola of left mandible with a distal obtuse tubercle. Maxilla (figs. 28, 31, 34): cardo well developed, not divided, with a pair of setae; stipes longitudinal, ventral side (figs. 28, 31) with 5 setae, dorsal side (fig. 34) with 2 lateral groups of spines and a setose tuft; mala cleft, three apical teeth on internal margin, external margin with 8 setae, ventral side (fig. 31) with 2 setae near internal margin, dorsal side (fig. 34) with 9 stout marginal and 7 submarginal setae adjacent to internal edge; palp 3-segmented, segments 1 and 2 transverse, segment 3 longer than segments 1 and 2 together, segments 1 and 2 with small spines on dorsal side (fig. 34), segment 2 with a digitiform peg in groove (fig. 34). Maxillary articulating area (fig. 28) longitudinal; lateral margins rounded; with 1 setae. Labium (figs. 28, 35): ligula well developed, anterior region with minute setae; 6 sensorial spots; prementum with a

pair of short setae near palpiger base; mentum convergent posteriorly, 2 pairs of setae near base, gulamentum longitudinal, large at base, with 1 pair of setae; palpiger with a pair of setae; palp (figs. 28, 35) 2-segmented, segment 2 slightly longer than segment 1 and with a developed apical sensory. Hypopharynx (figs. 34, 35) covered by setae and short spines; sclerome transverse, slightly rounded, anterior and lateral margins more sclerotized, partially covered by short setae.

Thorax. Segments rectangular; very similar; segment 1 slightly longer than segments 2 and 3. Dorsal side (fig. 21) with 2 setose lines, short setae mixed with long setae. Ventral side (fig. 22) with few setae on mesal region; postgular region (fig. 37) with 2 pairs of setae; prosternum (fig. 22) slightly pentagonal, apex prolonged posteriorly. A ventral pair of annular-biforous spiracles (fig. 40) on mesothoracic lateroanterior region. Legs (fig. 26) short; very similar in size and shape; setose; coxa large; trochanter triangular; femur shorter than tibia; tarsungulus (fig. 27) stout, bisetose, apex more sclerotized than base.

Abdomen. Segments 1-8 very similar in shape, size and vestiture; rectangular; dorsal side (figs. 21, 23) with a basal pair of long setae, lateral regions with a variable number of long and short setae, tergites extending onto the ventral side (figs. 22, 24); sternites 1-7 with 2 setose lines, sternite 8 (fig. 24) with 3 setose lines. Segment 9 (figs. 23-25) narrowed to apex; with a pair of setose tubercles near urogomphi base; young larva (fig. 41) slightly notched between urogomphi; mature larva (figs. 23, 24) strongly notched between urogomphi, with many long setae. Urogomphi: young larva (fig. 41) apex slightly curved upwards, internal margin with a pair of tubercles; mature larva (figs. 23, 24) apex curved upwards, stout, apical region strongly sclerotized, internal margin with 2 pairs of tubercles. Segment 10 (figs. 24, 25) completely hidden by segment 9; tubular; setose; anal opening (fig. 24) transverse. Spiracles present on lateral anterior region of segments 1-8; air tubes distinct only in the spiracles of segments 1-3.

Pupa (figs. 42, 43). Length: 3.7mm; width: 1.1mm at abdominal segment 2. Aedeicous; exarate; white-cream; setae inserted on small tubercles. Head hidden by pronotum; setose mainly on frontal region, short setae mixed with long setae. Antennae with many spiniform projections. Thorax: pronotum almost quadrangular; basal region slightly compressed; 7 pairs of marginal setae, 3 submarginal and 2 mesal. Meso- and metathorax with 3 pairs of setae on dorsomesal region. Abdomen: segments diminishing gradually in width from the anterior to the posterior; segments 1-6 subrectangular; segment 7 triangular; segment 8 shortened at the middle; segment 9 with a pair of curvate projections on posterior margin. Dorsal side: segments 1 and 7 with 3 pairs of laterobasal setae; segments 2-6 with 5 pairs of lateral setae; mesobasal spinose area on segments 2-7; asperate bands adjacent to anterior margin segments 2-6. Ventral side with a pair of longitudinal carinae on segments 5 and 6.

Remark. This is the first described pupa of this genus.

Bionomics. Adults of *Lagrioida nortoni* were collected from sand dunes in the extensive Southern Brazilian beach of Cassino (32° 14' S, 52° 10' W), on leaves, spikelets and stems of *Panicum racemosum* Spr. and *Spartina ciliata* Kunth (Gramineae).

This kind of habitat seems to be characteristic to the genus *Lagrioida*. In fact, *L. rufula* and *L. obscurella* from Chile were found "dans les dunes, sous les *Mesembryanthemum*" (= *Mesembryanthemum*) (Aizoaceae) (FAIRMAIRE & GERMAIN, 1863: 235). *L. australis* was found "at roots of grass and herbage on the sand-hills" (CHAMPION, 1895: 238) and *L. brouni*, "under logs on the sea-beach" (PASCOE, 1876: 58).

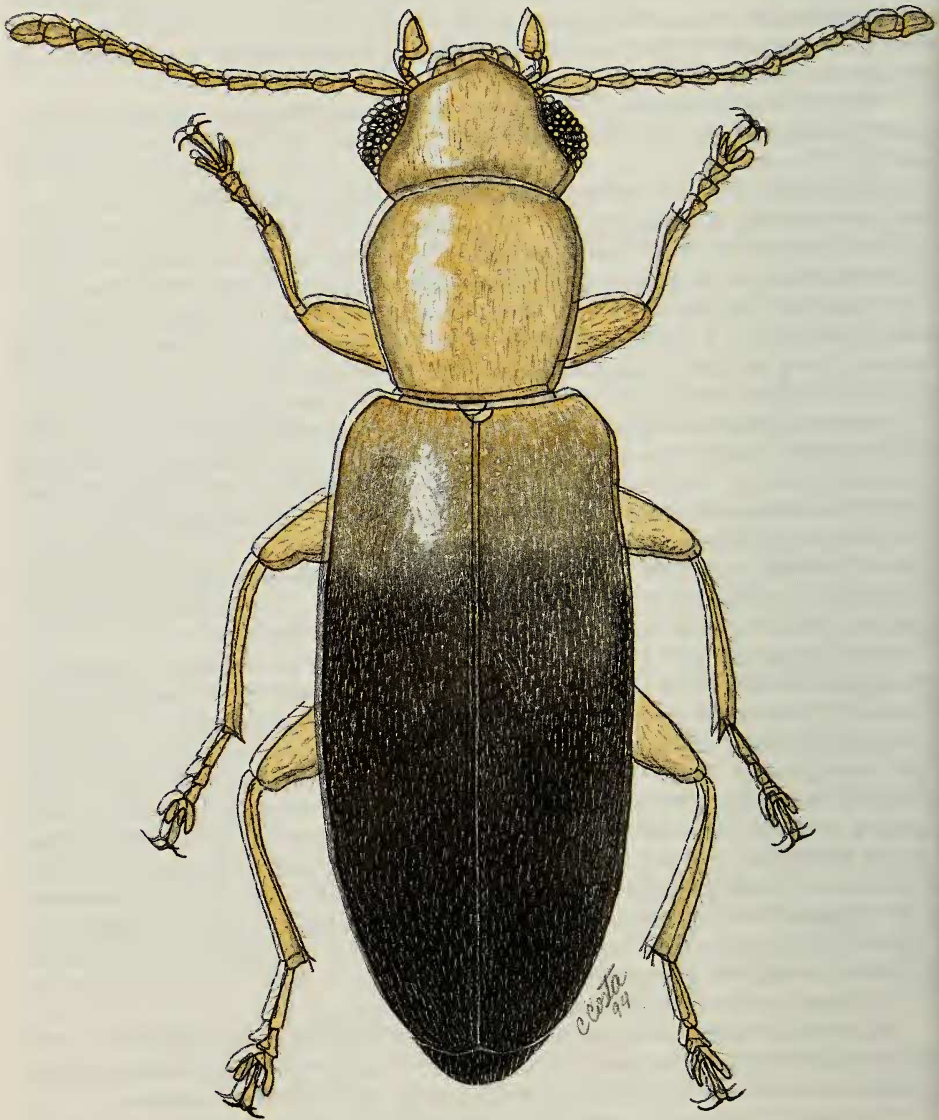
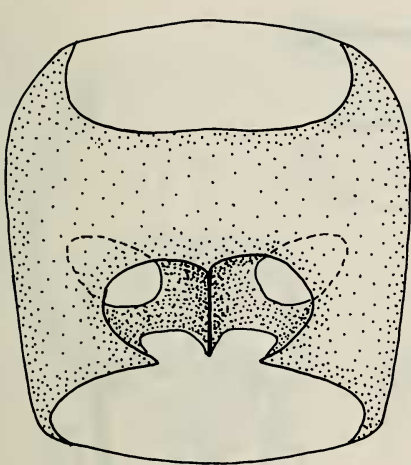
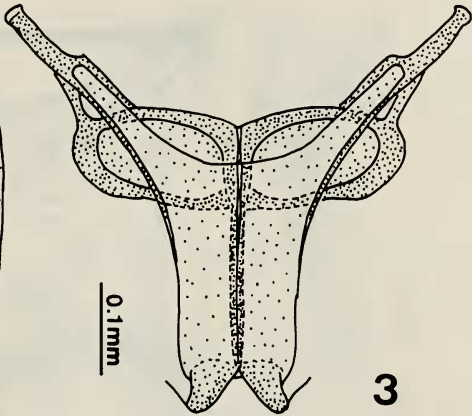


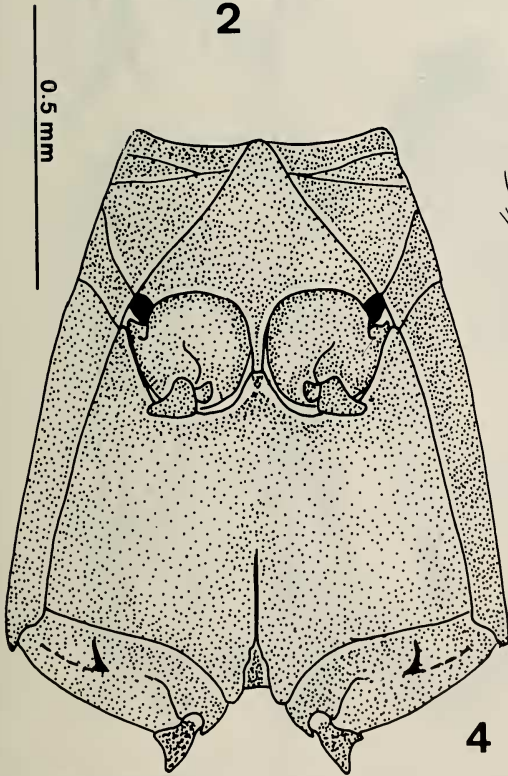
Fig. 1. *Lagrioida nortoni* sp. n. Holotype; male (length: 4.3 mm).



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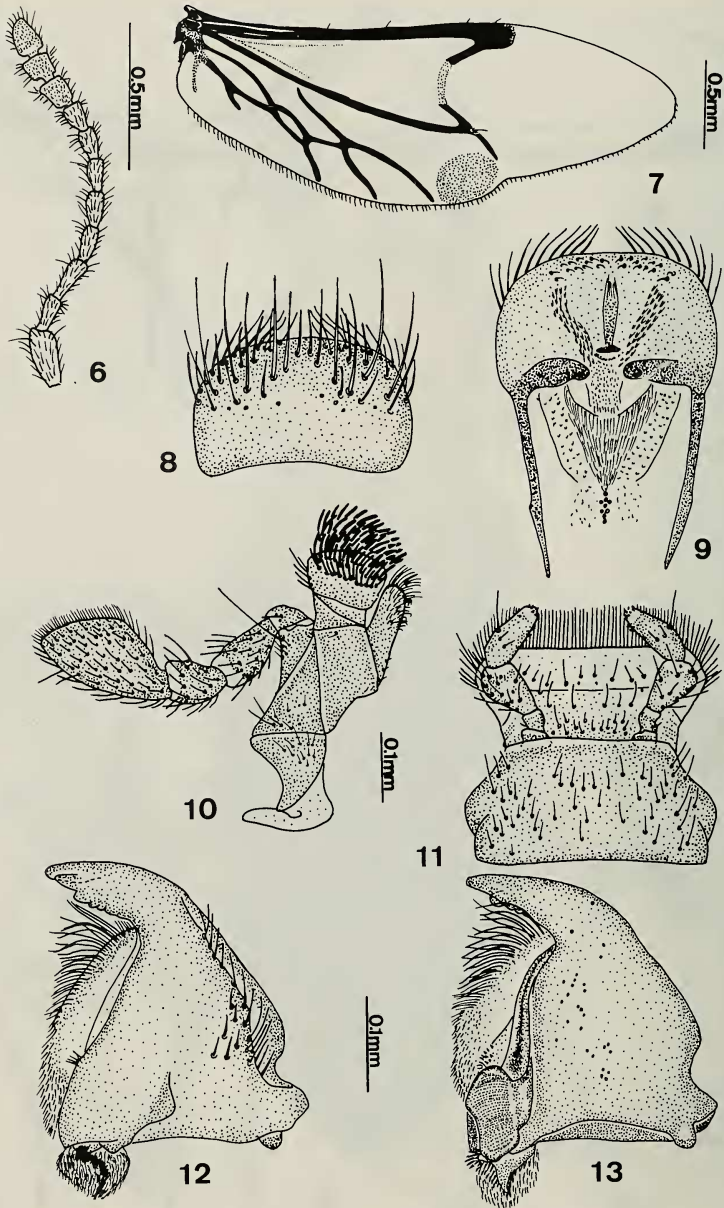


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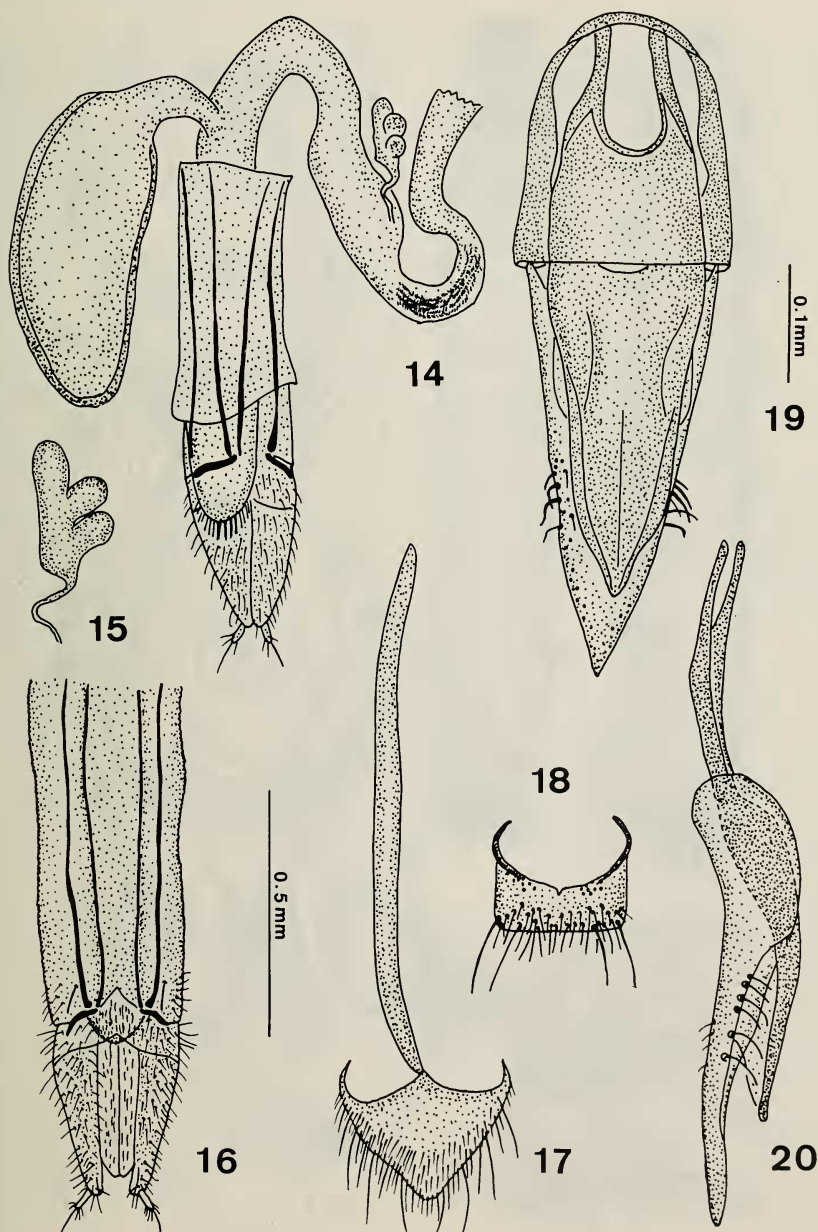


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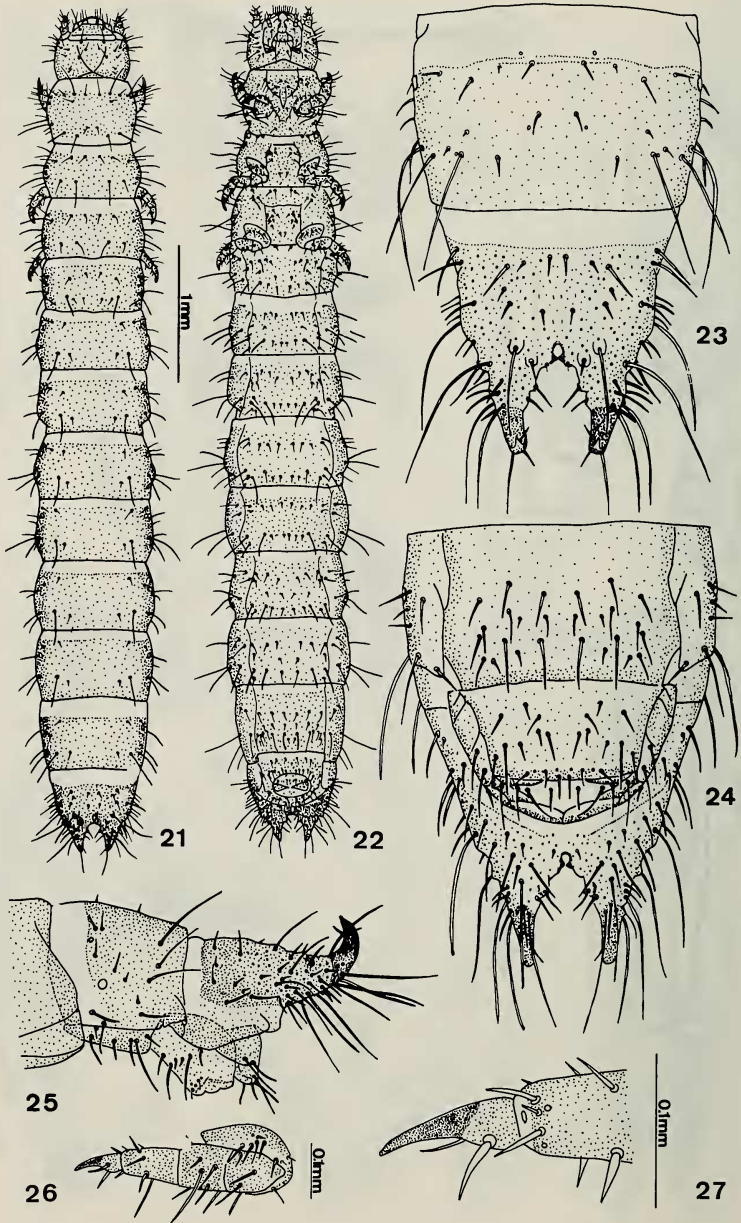
Figs. 2-5. *Lagrioida nortoni* sp. n.. Adult: 2, prothorax (ventral); 3, metendosternite; 4, meso- and metathorax (ventral). Female: 5, hypopharynx. Figs. 2, 3 in the same scale.



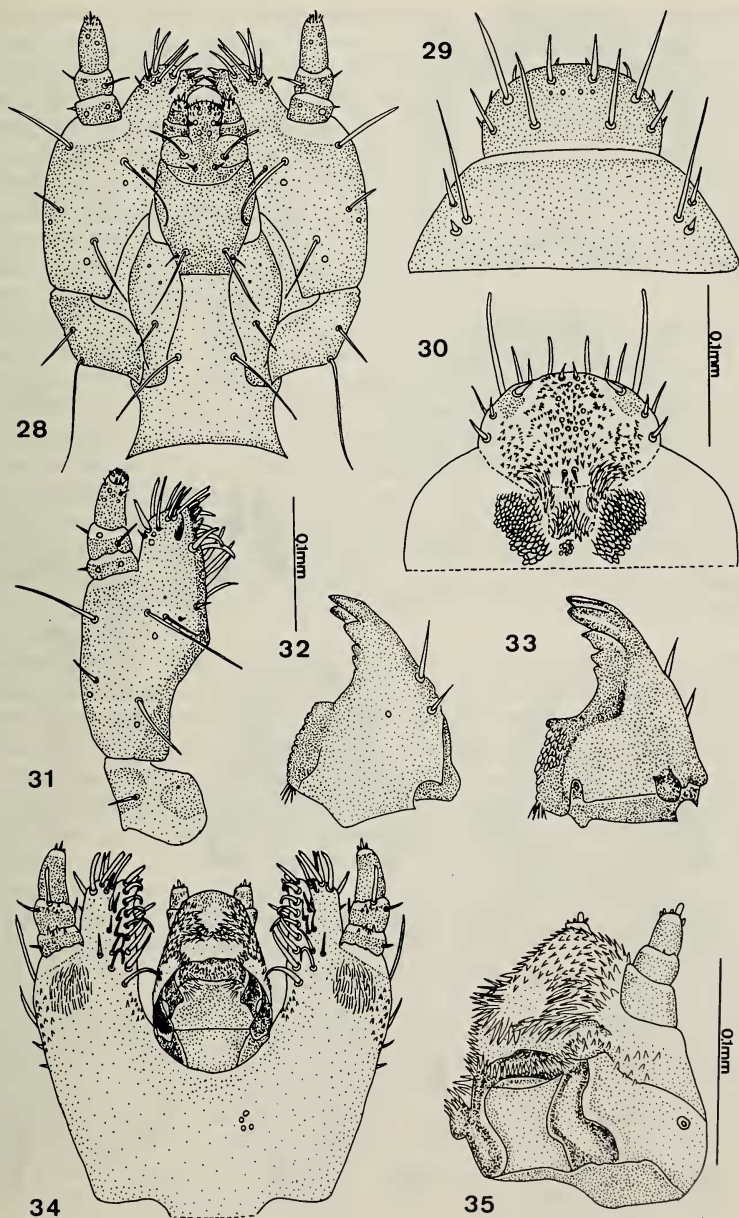
Figs. 6-13. *Lagrioida nortoni* sp. n.. Male: 7, membranous wing. Female: 6, antenna; 8, labrum; 9, epipharynx; 10, maxilla; 11, labium; 12, 13, mandible (left dorsal, right ventral). Figs. 8-11; 12, 13, respectively, in the same scale.



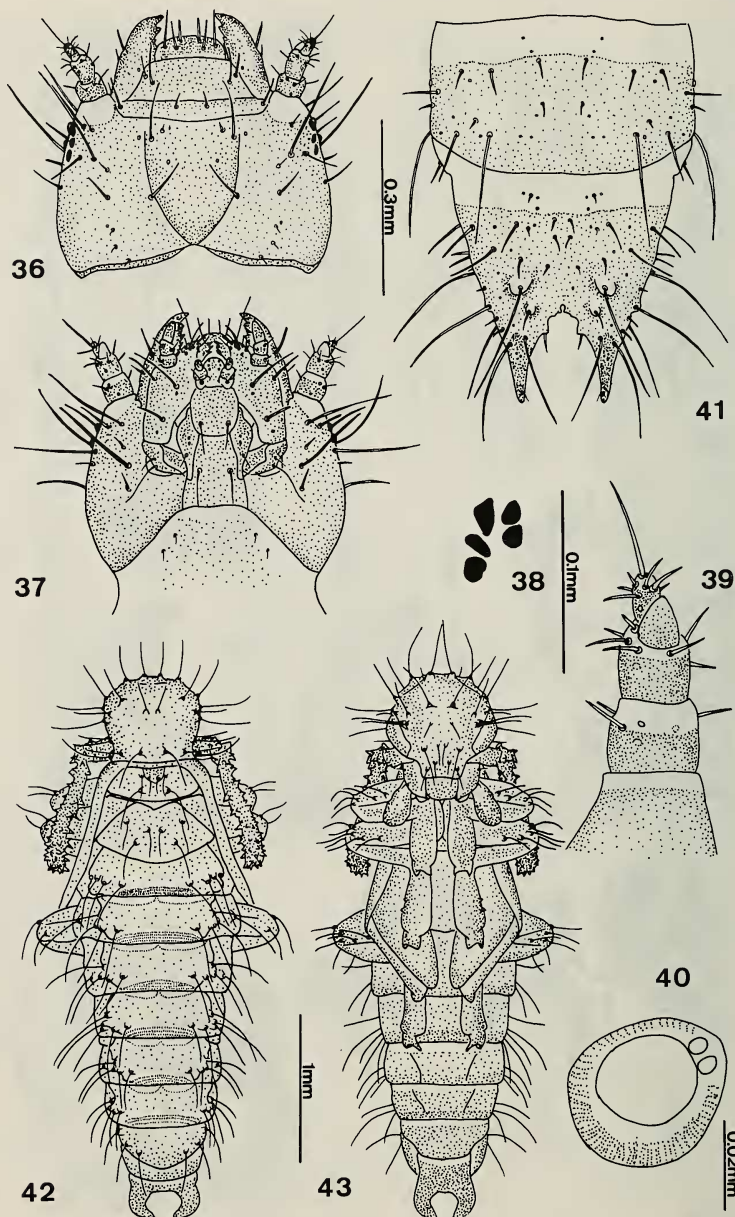
Figs. 14-20. *Lagrioida nortoni* sp. n.. Male: 19, 20, aedeagus (dorsal, lateral without basal piece). Female: 14, reproductive system (general, dorsal); 15, spermatheca; 16, ovipositor (ventral); 17, ventrite 8; 18, urotergite 8. Figs. 14-18; 19, 20, respectively, in the same scale.



Figs. 21-27. *Lagrioida nortoni* sp. n. Paratype; mature larva: 21, 22, general (dorsal, ventral); 23, abdominal segments 8-9; 24, 25, abdominal segments 8-10 (ventral, lateral); 26, 27, anterior leg (general, tarsungulus). Figs. 21, 22; 23-25, 27, respectively, in the same scale.



Figs. 28-35. *Lagrioida nortoni* sp. n. Paratype; mature larva: 28, maxilla and labium; 29, labrum and postclypeus; 30, epipharynx; 31, maxilla (ventral); 32, 33, mandible (left dorsal, right ventral); 34, maxilla and hypopharynx; 35 labium and hypopharynx (oblique). Figs 28, 31-34; 29, 30, respectively, in the same scale.



Figs. 36-43. *Lagrioida nortoni*, sp. n.. Young larva: 41, abdominal segments 8-9 (dorsal). Paratype; mature larva: 36, 37, head, general (dorsal, ventral); 38, stemmata; 39, antenna; 40, thoracic spiracle. Paratype; pupa: 42, 43, general (dorsal, ventral). Figs. 36, 37, 41; 42, 43, respectively, in the same scale.

Eggs were obtained by killing adults in alcohol 70% and also from the radicles of plants carried to the laboratory. They were found in great quantities on the radicles but isolated one from each other. Adults in the field appear to feed upon the Gramineae spikelets and are more abundant from the spring to the beginning of summer, period which agrees with the blooming time of the dunes grasses. At the laboratory they remained alive for ca. 2 months, been provided only with water. Mating was observed but not the oviposition. Larvae were collected from the radicles and also from the base of dead leaves. From the adults kept in the laboratory were obtained eggs and a lot of young larvae. Several mature larvae were fixed for study, two were reared up to adult and three others up to pupa. The larvae feed upon dead leaves and root debris. The larval period required about two months and the pupal phase took 18 days.

Discussion. After MAMAEV's (1976) and DOYEN's (1979) papers the genus *Lagrioida* remained as the only representative of the Lagrioidini, Anthicidae. LAWRENCE & BRITTON (1991: 671) called the attention to the systematic position of *Lagrioida*: "The genus differs from all other anthicids in a number of adult and larval features, and may be misplaced in this family". In fact, a detailed morphological study of both immatures and adults of *L. nortoni* showed a series of characters shared by members of heteromeran families. As the character states have not been adequately polarized yet, the comparison and similarities are typological, and any decision assumed before the accomplishment of a cladistic analysis should be regarded as arbitrary. As the aims of our study are to describe the adult and immatures of a new Brazilian species of *Lagrioida* and to report the bionomics of the species, we decided not to change the systematic position of this genus.

Regarding the adults, the genus agrees with several characters present in the Anthicidae (excluding Pedilidae and Cononotidae): presence of a weak antennal club; pronotum without lateral carinae; apical segment of maxillary palp securiform; mesepisternum meeting in front of mesosternum; metendosternite with well developed lamina; metacoxa with a narrow-based apophysis; penultimate tarsal segment lobed beneath. Considering the larva, it shares the mola with a ventral penicillus (or brustia?) and urogomphal pits absent on abdominal segment 9. However there are a number of disagreements both in the adults and in the larvae (character states parenthetic in Anthicidae) - i) adults: first 2 ventrites connate in *Lagrioida* (free); neck wide, head weakly constricted behind eyes (abruptly constricted); antennal insertions concealed (exposed); aedeagus of the heteromeran inverted type (not inverted), with median lobe continued from the dorsal part as 2 median struts (a single broad strut), and basal piece of tegmen without struts (a pair of divergent struts); - ii) larvae: 5 stemmata on each side of the head (1 pair or absent); frontoclypeal suture present (absent); and mala cleft (entire).

The adults of *Lagrioida* share with Pedilidae (excluding *Agnathus* and *Cononotus*) the neck wide and the mesocoxal cavities open; however, can be easily differentiated by (character states parenthetic in pedilids): procoxal cavities open only externally (internally and externally); antennae weakly clubbed (filiform); ligula entire (bilobed); males parameres fused (separate apically). The *Lagrioida* larvae have in common with the larvae of *Pedilus*: mandibles with bidentate apex and scissorial area tridentate; internal margin of mala with tridentate apex. They are easily differentiated by the absence of urogomphal pits (present) and the absence of asperities associated with the anterolateral aspect of the ninth abdominal sternite (present).

The most outstanding characters shared by adults of *Lagrioida* and Pedilidae

(considering only *Agnathus* and *Cononotus*) are the first 2 ventrites connate and the aedeagus of inverted heteromeran type, with cap-piece ventral. They differ as follow (character states parenthetic in *Agnathus* and *Cononotus*): antenna weakly clubbed (filiform); penultimate tarsomere deeply bilobed (all tarsomeres simple, without lobes); middle coxal cavities open, reached by mesepisterna (closed outwardly by sterna). The larva of *Lagrioida* has in common with the larva of *Agnathus*: 5 stemmata on each side of head; mandibles with bidentate apex and scissorial area tridentate; internal margin of mala with tridentate apex (these 2 last features are also present in *Pedilus*). *Lagrioida* larva differs from *Agnathus* larva by frontoclypeal suture present (absent); urogomphal pits absent (present). Comparing larva of *Lagrioida* with that of *Cononotus* they have a few similarities: mala cleft (apically incised). The differences are: 5 stemmata (absent); and the urogomphal pits absent (present).

We have not found exclusive features to *Lagrioida* in the adult stage. The larval stage showed a few unique ones: frontal suture U-shaped, clypeus divided into ante- and postclypeus and frontoclypeal suture present. As pointed out before, the shared similarities may be plesiomorphic, apomorphic or homoplastic, and only after polarization of character states could be used in determining the affinities of the genus.

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